

# MISCELLANEA ENTOMOLOGICA.

No. I.—THE GENUS DIPHUCEPHALA.

BY WILLIAM MACLEAY, F.L.S., &c.

It is now within a few months of thirteen years, since I published in the Transactions of the Entomological Society of New South Wales, a paper under the above title. I adopt the same prefix now, because my intention and objects are the same as on that occasion. It was my wish then as now, to describe from time to time such new or little known species of insects as I came across in my collection, and, to render such descriptions more interesting and instructive to the Entomologist, to accompany them with a review or revision of the genus or group to which each species belongs.

In this as in the previous paper, I shall not take my subjects in any classified order but shall pass from one to another, as I find most suitable to my studies. I begin with the very attractive and distinctly Australian Group of the *Melolonthiidae*, comprised in the genus *Diphucephala* of Serville.

A very complete and excellent monograph of the genus, from the pen of G. R. Waterhouse, was published in the year 1835, in the first Volume of the Transactions of the Entomological Society of London. At that time only 16 species were known, since then 7 species have been added—2 by Blanchard, 2 by Burmeister, and 3 by myself. The present paper adds 20 to the number, so that a short revision of the group seems to me now to be not merely excusable but very necessary.

My original intention was to give merely references to the species previously described, but finding the number of new species to be described so large, it seemed to me that it would be a matter of

convenience to those interested in the subject, and who are perhaps far removed from access to books, to make the monograph complete, by including the descriptions of all the species.

Lacordaire in his "Genres des Coléoptères" places *Diphucephala* in his Sub-Tribe Sericides which he characterizes thus:—" *Melolonthidæ* having the labium soldered to the mentum, mandibles prolonged on their internal face into a large thin plate. Labrum none or not separable from the clypeus. Abdominal segments not soldered together."

The Sub-Tribe (Sericides) is represented in Australia by three very distinct and characteristic groups. 1. The *Phyllotocides*, a group which I monographed in the Transactions of the Ent. Soc. of New South Wales in the year 1863. 2. The *Diphucephalides* the group now under consideration and 3. The *Mæchidiides*, which includes all insects referable to the genus *Mæchidius* of W. S. Macleay.

The second of these groups is thus characterized by Lacordaire:—" Labium corneous, soldered to the mentum. Outer lobe of the maxillæ toothed. Clypeus double. Posterior coxæ narrow. Metasternum cut squarely behind."

The following is a translation of Lacordaire's definition of the

#### Genus, DIPHUCEPHALA.

*Mentum* flat or convex, narrowed at the base, slightly rounded, truncate or slightly emarginate in front.

*Maxillæ* robust, the external lobe armed with 5 or 6 teeth.

*Palpi* very short, the last joint of the labial obconic, that of the maxillary oval, more or less thick.

*Head* moderately long, flat; clypeus large; nearly square, separated from the forehead by a fine suture, varying in the sexes, emarginate in front.

*Eyes* moderate.

*Antennæ* short, of eight joints: 1st long, swelled at the apex, 2nd nearly as long, obconic, 3rd short, 4th elongate and compressed, 5th very short, the three last forming an oblong mass in the males, oval in the females.

*Thorax* of varying length, more or less angular on the sides, sinuate or truncate at the base, often grooved or foveate on the disk.

*Scutellum* of curvilinear triangular form, very sharp at the extremity.

*Elytra* of an oblong square form, rounded with a perpendicular border at the apex.

*Legs* rather long; the anterior tibiæ bi- or uni-dentate at their extremities without terminal spur, the four posterior ciliated or velvety; tarsi of variable length, the three or four first joints of the anterior and two or three first of the intermediate dilated in the males and clothed with long hairs, the claws robust, cleft at the summit.

*Pygidium* perpendicular, of variable form and size.

All are insects of small size and for the most part of intense metallic brilliancy of colouring. The larvæ are unknown, the perfect insects live, some on leaves, others on the petals of flowers. They are found in all parts of Australia, but the Coast Districts of New South Wales and Southern Queensland seems to be by far the most rich in species. Some species have been observed to become occasionally so numerous on their food plants as to be destructive, but such cases I believe to be very rare.

The following synopsis of the species ranged under the most prominent distinctive features in the genus, will I think simplify the identification of the species, and may save the investigator much of the time which would be spent in referring to long descriptions.

## SECTION I.

Legs reddish, not metallic.

Diphucephala sericea, Kirby.	Diphucephala obscura, n. sp.
„ rufipes, Waterh.	„ ignota, n. sp.
„ lineata, Boisd.	„ minima, n. sp.
„ Richmondia, n. sp.	„ nitens, n. sp.
„ nitidicollis, n. sp.	„ pubescens, n. sp.
	Diphucephala hirtipennis, Macleay.

## SECTION II.

Legs of metallic lustre.

## SUB-SECTION A.

Emargination of clypeus in the male deep, the angles not or scarcely diverging.

- Diphucephala Childrenii, Waterh. Diphucephala affinis, Waterh.  
 „ furcata, Guér. „ Edwardsi, Waterh.  
 Diphucephala beryllina, Burm.

## SUB-SECTION B.

Emargination of clypeus more or less deep, the angles always diverging.

- |  |                          |                                      |
|--|--------------------------|--------------------------------------|
|  | }                        | Diphucephala colaspidoïdes, Gyllenh. |
|  |                          | „ rugosa, Boisd.                     |
|  |                          | „ castanoptera, Waterh.              |
|  |                          | „ cœrulea, Macl.                     |
|  |                          | „ latipennis, Macl.                  |
| Dorsal channel of thorax<br>single. Lateral foveæ<br>not reaching the dorsal<br>channel.     |                          | „ Mastersi, n. sp.                   |
|  |                          | „ Barnardi, n. sp.                   |
|  |                          | „ laticeps, n. sp.                   |
|  |                          | „ cuprea, n. sp.                     |
|  |                          | „ humeralis, n. sp.                  |
|  |                          | „ Waterhousei, Burm.                 |
|  |                          | „ quadritigera, Blanch.              |
|  |                          | „ angusticeps, n. sp.                |
|  | „ azureipennis, n. sp.   |                                      |
| Dorsal channel of thorax<br>single. Lateral foveæ<br>extending across the<br>dorsal channel. | „ pulchella, Waterh.     |                                      |
|  | „ aurolimbata, Blanch.   |                                      |
|  | „ smaragdula, Boisd.     |                                      |
|  | „ prasina, n. sp.        |                                      |
| Dorsal channel of thorax<br>double at the base.  | „ aurulenta, Kirby.      |                                      |
|  | „ parvula, Waterh.       |                                      |
|  | „ purpureitarsis, n. sp. |                                      |
|  | „ obsoleta, n. sp.       |                                      |
|  | „ pygmæa, Waterh.        |                                      |
|  | „ lateralis, n. sp.      |                                      |

## SECTION I.

Legs reddish, not metallic.

## 1. DIPHUCEPHALA SERICEA, Kirby.

Linn. Soc. Trans. Lond. XII. p. 463 ; Waterh. Trans. Ent. Soc. Lond. I. p. 217, pl. 22, fig. 1 ; Burm. Handb. IV. 2, p. 114 ; Blanch. Cat. Mus. Paris, p. 98 ; *D. viridis*, Sturm. Cat. 1826, p. 204.

Head and thorax green and subopaque, densely and very minutely punctate, and densely clothed with a short decumbent pile ; the latter almost obsolete canaliculate in the middle, and slightly foveate and angled on the sides. Scutellum smooth, depressed in the middle. Elytra bluish-green, sericeous, lightly rugose-punctate, with two slightly elevated ridges on each and clothed thinly with rows of a decumbent ashen pile. Under surface more densely pilose than the upper, the pygidium large, rather convex, of a brilliant green with whitish pile, the penultimate segment with a fringe of long hairs. The legs are red, the tarsi rather darker, and clothed with whitish hairs, the fore tibiæ are triangularly ridged and have two short bluntish teeth slightly recurved and close together on the outer apex, and the intermediate have two acute spines on the inner apex.

Length,  $4\frac{1}{2}$  lines.

*Hab.*—Coast Districts of New South Wales, generally frequenting Acacia trees.

## 2. DIPHUCEPHALA RUFIPES, Waterh.

Trans. Ent. Soc. Lond. I. p. 225 ; Burm. Handb. IV. p. 115.

Of a brilliant green with red legs. Head and thorax very minutely and densely punctate, with a very short pubescence, the clypeus of the male moderately emarginate and reflexed with the angles not acutely pointed. The thorax has the dorsal channel narrow and the lateral foveæ small. Scutellum smooth and

triangular. Elytra rugosely punctate, two very slightly raised lines on each elytron. The under surface is densely covered with white pubescence. The pygidium is very large. The fore tibiæ are rather minutely bidentate on the outer apex, the intermediate minutely spurred on the inner apex, and the posterior are brown on the apical half.

Length, 3 lines.

*Hab.*—New South Wales.

### 3. DIPHUCEPHALA LINEATA, Boisd.

Voy. Astrol. Col., p. 202; *D. pilistriata*, Waterh., Trans. Ent. Soc., Lond., I., p. 21.

Green, nitid, clothed rather thinly with white decumbent pile above and below; that on the elytra being disposed in rows. The clypeus is only slightly emarginate; the thorax is sparsely punctate, the lateral foveæ very large and deep, extending to the dorsal channel which is large and wide. Scutellum smooth, of curvilinear triangular form. Elytra punctate in irregular rows. Legs entirely red, the fore tibiæ strongly bidentated, the terminal tooth considerably recurved, the intermediate and posterior tibiæ spurred on the inner apex.

Length,  $3\frac{1}{4}$  lines.

*Hab.*—New South Wales?

The specimens of this insect in the Macleayan Museum have no locality affixed to them, and I have never seen it elsewhere.

### 4. DIPHUCEPHALA RICHMONDIA, n. sp.

Very like *D. lineata*, but much larger. The head is bright metallic green, punctured in front and smooth behind; with a shallow impression between the eyes and a transverse one on the vertex; the clypeus is broad, sharply angled and recurved on sides and angle. The thorax is of a brilliant metallic green, more thinly pilose than *D. lineata*, and with the dorsal and transverse channels deeper and more continuous. Scutellum smooth and a little depressed in the middle. The elytra are of a ruddy metallic hue,

roughly and densely punctate with rows of decumbent pile as in *D. lineata*. The abdomen less pilose than in that species. Legs red. Fore tibiæ bluntly bidentate.

Length, 4 lines.

*Hab.*—Richmond River.

#### 5. *DIPHUCEPHALA NITIDICOLLIS*, n. sp.

Metallic green, legs pale red; the whole body clothed rather thinly with a short ashen pile. Head minutely and densely punctate, broad, and vertical, with the clypeus broadly but not deeply emarginate at the apex which is slightly wider than the base, and the angles recurved and rounded. The thorax has a somewhat coppery tinge and is densely and minutely punctate, the dorsal channel is broad but not deep, the lateral foveæ are deep but do not form a continuous transverse depression, and the sides are acutely angled at the lateral fovea.

The elytra are rugose and coarsely and rather transversely punctate with two almost obsolete costæ on each elytron. The pygidium is large, the apex smooth and of a coppery lustre. The upper tooth of the fore tibiæ minute and near the other.

Length,  $3\frac{1}{2}$  lines.

*Hab.*—Illawarra.

#### 6. *DIPHUCEPHALA OBSCURA*, n. sp.

This species resembles *D. nitidicollis* in many respects, but it is more pilose and coarsely punctate. The head has the median line on the forehead just traceable, the suture of the clypeus is visible and slightly sinuate in the middle, the suture of the proclypeus forms in the middle a short transverse ridge, the apex is slightly emarginate and the angles are very slightly reflexed. The thorax has the dorsal channel large, depressed in the middle, and the transverse depression extends right across from one lateral fovea to the other.

Length, 4 lines.

*Hab.*—New South Wales.

7. *DIPHUCEPHALA* *IGNOTA*, n. sp.

Coppery-red on the upper surface, dark metallic-green beneath. Legs red. Sparingly pilose all over. Head punctate, the clypeus slightly emarginate, the angles slightly reflexed and somewhat truncate, the suture of the proclypeus forms a semi-circular transverse ridge; a deep groove extends along the vertex from one eye to the other. The thorax is rugosely punctate, the dorsal channel is deep but narrow, the transverse depressions large and deep, but not quite joined in the middle. A depression and a few small punctures on the scutellum. The elytra are coarsely but rather regularly punctate, with a tolerably distinct callus at the apical declivity. The under surface is very nitid and very sparingly pilose.

Length, 3 lines.

*Hab.*—New South Wales.

One very defective specimen of this species is all I have seen, and I have no idea what part of the country it came from.

8. *DIPHUCEPHALA* *MINIMA*, n. sp.

This at first sight might possibly be mistaken for a very small specimen of *D. rufipes*; it is, however, very distinct. Colour entirely metallic-green with reddish legs. The head is small and punctate, the clypeus is triangularly emarginate with the angles rather acute and much reflexed. Thorax nearly as long as wide, the anterior angles acute, the middle of each side distinctly angular, the lateral foveæ deep but scarcely meeting in the middle, and the dorsal channel formed of a very faint ridge with a broad depression on each side. The scutellum is depressed in the middle and of a slight coppery hue. The elytra are coarsely punctate in tolerably regular rows, and are without vestige of longitudinal costæ. The under surface is more densely pilose than the upper. Tibiæ not bidentate.

Length, 2 lines.

*Hab.*—Currajong. One specimen, Macl. Mus.



9. *DIPHUCEPHALA NITENS*, n. sp.

Of short robust form. Metallic-green with red legs, the pubescence, both above and beneath, extremely short, and not dense. Head and clypeus densely and finely punctate, the latter scarcely emarginate or reflexed. Thorax finely punctate, the disk very nitid and of a golden-red, the sides not angled, the dorsal channel straight and narrow and the lateral foveæ small. Scutellum smooth and of a brilliant coppery lustre. Elytra green on the disk and golden or coppery-red on the sides, densely and coarsely punctate in irregular rows, with two of the interstices and the suture on each elytron forming smooth costæ. The legs are strong and of a pale red colour, the fore tibiæ are strongly bidentated externally, the intermediate unidentate, and both the tarsi and extremities of the tibiæ in the four posterior legs are brown.

Length,  $2\frac{1}{2}$  lines.

*Hab.*—Endeavour River.

10. *DIPHUCEPHALA PUBESCENS*, n. sp.

Green, the whole upper surface densely and equally clothed with a short yellowish decumbent pubescence, the under surface still more densely covered with a white decumbent pubescence. Clypeus slightly emarginate and reflexed. Dorsal channel of thorax broad and shallow on its posterior half, the lateral foveæ small. Scutellum smooth. Pygidium large, glabrous at the apex. Legs red, fore tibiæ bidentate.

Length,  $2\frac{3}{4}$  lines.

*Hab.* Queensland.

11. *DIPHUCEPHALA HIRTIPENNIS*, Maccl.

Proc. Linn. Soc. N. S. Wales, VIII. p. 415.

*Hab.*—Queensland.

The type of this species is in the Brisbane Museum, and so far as I know nowhere else. As it was originally described in the Publications of this Society, I avoid repeating the description.

## SECTION II.

Legs of metallic lustre.

## SUB-SECTION A.

Emargination of clypeus in the male deep, the angles not or scarcely diverging.

## 12. DIPHUCEPHALA CHILDRENI, Waterh.

Trans. Ent. Soc. Lond. I. p. 222 ; Burm. Handb. IV. p. 115.

Of a general sericeous appearance ; the head and thorax are of a dull golden-green colour, the elytra are of a dull green margined with golden-green. The thorax is very minutely punctate, the dorsal channel light and narrow, the lateral foveæ small. The scutellum is smooth and longitudinally impressed in the middle. The puncturation of the elytra is of the same character as in the other species but more obliterate. The under surface is thinly clothed with decumbent pubescence, the fore tibiæ are bidentate, the teeth distant, the tarsi are cyaneous. The clypeus of the male is deeply emarginate, the angles slightly approaching in front.

Length, 5 lines.

*Hab.*—West Australia.

## 13. DIPHUCEPHALA FURCATA, Guér.

Voy. Coquille, II. p. 89 ; Règn. Anim. t. 24, fig. 13 ; *D. acanthopus*, Boisd. Voy. Astrol. Col. p. 202 ; *D. Hopei*, Waterh. Trans. Ent. Soc. Lond. I. fig. 219 ; Burm. Handb. IV. p. 119.

This species resembles *D. Childrenii* in many respects. The head and thorax are very densely and extremely minutely punctate like shagreen, the latter slightly marked as in *D. Childrenii*. The scutellum is also similar, the elytra differ in being nitid and deeply punctate, the under surface is thinly pubescent, and the segments of the abdomen are furnished with frills of long hair. The legs are coppery, the tarsi cyaneous, the fore tibiæ without the upper tooth on the outside but all the tibiæ have a short strong tooth on the inner apex. The clypeus of the males as in *D. Childrenii*.

Length, 5 lines.

*Hab.*—West Australia.

## 14. DIPHUCEPHALA AFFINIS, Waterh.

Trans. Ent. Soc. Lond. I. p. 219.

This species differs from *D. furcata* in being entirely of a nitid metallic-green, the under surface only being clothed with decumbent pile. The thorax is distinctly but thinly punctured in the female, less so in the males, the dorsal channel and lateral foveæ lightly marked. The bidentation of the anterior tibiæ is very slight, and the teeth are distant. In all other respects the resemblance to *D. furcata* is complete.

Length,  $4\frac{1}{2}$  lines.

*Hab.*—West Australia.

## 15. DIPHUCEPHALA EDWARDSI, Waterh.

Trans. Ent. Soc. Lond. I. p. 220; Burm. Handb. IV. p. 121.

Entirely of a golden-green colour, and not very nitid. Head and thorax minutely and rugosely punctate, the latter having the dorsal channel and lateral foveæ very shallow. Scutellum minutely punctate. Elytra coarsely punctate in irregular rows, the punctures becoming effaced at the apex. The under surface is thinly clothed with decumbent pile, the pygidium very sparingly. Tarsi cyaneous, anterior tibiæ bidentate externally, all the tibiæ armed with a short triangular spur on the inner apex. The clypeus of the male is deeply emarginate, but the angles diverge slightly, showing an approach to the next group.

Length, 4 lines.

*Hab.*—West Australia.

## 16. DIPHUCEPHALA BERYLLINA, Burm.

Handb. IV. p. 121.

Brassy-green, with the head, apical portion of the thorax, and the external margin of the elytra of a coppery-golden lustre, beneath with white pubescence, the fore tibiæ not bidentate.

Length, 4 lines.

*Hab.*—Swan River.

This is the description given by Burmeister of this species, and I cannot improve on it, as I have never been able to recognise it with certainty. I have, however, seen at the Australian Museum a specimen from Mt. Barker, near King-George's Sound, which resembles the description, and is, I think, very likely to be the very species; if so it undoubtedly belongs to my Sub-section A.

#### SUB-SECTION B.

Emargination of clypeus, more or less deep, the angles always diverging.

1. Dorsal channel of thorax single, lateral foveæ not reaching the dorsal channel.

#### 17. DIPHUCEPHALA COLASPIDOIDES, Gyllenh.

Schonh. Syn. Ins. 1-3 App. p. 101; *D. lineatocollis*, Boisd. Voy. Astrol. Col. p. 201; *D. splendens*, W. S. Macl. King's Surv. p. 440; Waterh. Trans. Ent. Soc. Lond. 1. p. 220; Burm. Handb. IV. p. 121; *D. pubiventris*, Burm. Handb. IV. p. 119.

Brilliant bluish-green, covered beneath with whitish pubescence. Head densely punctate in front, smooth on the occiput, the suture of the clypeus distinct, and a little arched, the suture of the pro-clypeus forming a short semi-circular transverse raised line, and the apex moderately emarginate, the angles round and reflexed. Thorax thinly punctate, the dorsal channel narrow, the lateral foveæ rather large and the lateral margin reddish-pilose. Scutellum triangular, smooth. Elytra coarsely and sub-transversely punctate. Pygidium large, with a frill of long hairs at the apex. The legs green, hairy, the fore tibiæ bidentate, the teeth reddish, a strong curved spur at the apex of the hind tibiæ of the male.

Length, 4 lines.

*Hab.*—Victoria, Tasmania and S. Australia.

#### 18. DIPHUCEPHALA RUGOSA, Boisd.

Voy. Astrol. Col. p. 204; Dej. Cat. 3, p. 108; *D. Spencei*, Waterh. Trans. Ent. Soc. Lond. I. p. 224; Burm. Handb. IV. p. 116.

Of short broad form, coppery-green colour, and sparingly clothed above and beneath with decumbent white pile. Head punctate, the clypeus of the males slightly emarginate and reflexed, the angles not acute. The thorax is covered with large variolous-looking punctures, the dorsal channel is scarcely visible except on the basal portion, the lateral foveæ are deep but do not reach the middle, and the anterior angles are acute. The scutellum is depressed behind and very minutely punctate. The elytra are coarsely and densely punctate. The pygidium is convex, rounded and glabrous at the apex. The legs are green, the tarsi cyaneous, the fore tibiæ bidentate, the teeth reddish.

Length,  $2\frac{1}{2}$  lines.

*Hab.*—New South Wales.

Common about Sydney on flowers of *Dillwynia*.

#### 19. DIPHUCEPHALA CASTANOPTERA, Waterh.

Trans. Ent. Soc. Lond. I. p. 222 ; Burm. Handb., IV., p. 117.

This is the only species I know with non-metallic elytra. The head is punctate and of a golden-green, the clypeus lightly emarginate and reflexed and of a cyaneous-green, the thorax is pilose, of a golden-green, and rather sparingly punctate, the dorsal channel very broad on the basal half, and the lateral foveæ also large. Scutellum green, smooth, in form of a curvilinear triangle. Elytra reddish-chesnut sparingly pilose and punctate in tolerably regular rows. Anterior tibiæ strongly bidentate.

Length,  $3\frac{1}{2}$  lines.

*Hab.*—Port Macquarie.

#### 20. DIPHUCEPHALA CÆRULEA, MacL.

Proc. Linn. Soc. N. S. Wales, VIII. p. 415.

*Hab.*—Queensland.

Description omitted because previously printed in Society's Proceedings.

21. *DIPHUCEPHALA LATIPENNIS*, Macl.

Proc. Linn. Soc. N. S. Wales, VIII. p. 415.

*Hab.*—Queensland.

Description omitted for same reason as last species.

22. *DIPHUCEPHALA MASTERSI*, n. sp.

Of broad convex form, the upper surface excepting the scutellum entirely of a reddish coppery lustre, rather thickly clothed with decumbent whitish pile. The head is small, the clypeus rather deeply emarginate, narrow, the angles diverging, rounded and reflexed. Thorax moderately punctate, the dorsal channel lightly impressed, and the lateral foveæ not large. Scutellum golden-green, smooth, longitudinally impressed in the middle. Elytra rugosely but not deeply punctate. Under surface green, pilose, pygidium pointed, very hairy. Legs green, tarsi cyaneous, fore tibiæ not bidentate.

Length, 5 lines.

*Hab.*—King George's Sound.

23. *DIPHUCEPHALA BARNARDI*, n. sp.

Nitid metallic-green with an occasional bluish-green tinge, moderately pilose above, more densely beneath. Head densely punctate, the punctures on the clypeus more minute, a slight transverse depression from eye to eye across the vertex, the clypeus of the male rather deeply emarginate, the angles porrect, slightly reflexed and broadly rounded at the apex. The thorax is thinly punctate, the dorsal channel dilated ovally on the basal half, the lateral foveæ very deep and large, but not reaching the dorsal channel and the lateral angles prominent. The scutellum is triangularly rounded, with a depression in the middle towards the apex. The elytra are densely and rugosely punctate, with the pile apparently disposed in rows of single hairs, the female has the lateral margins

behind broad and reflexed and a strong spine at the apex of each elytron. The legs are metallic-green, the anterior tibiæ bidentate, the teeth reddish—very minute in the male, rather strong in the female.

Length,  $3\frac{1}{2}$  lines.

*Hab.*—Dawson River.

I have named this species after George Barnard, Esq., of Coomooboolaroo, Upper Dawson, from whom I have received this and many other rare and beautiful insects. The mucronate elytra of the females are the most distinguishing feature of this species.

24. *DIPHUCEPHALA LATICEPS*, n. sp.

Entirely metallic-green, moderately nitid, thinly pilose above, rather densely beneath. Head densely and finely punctate, clypeus broad, square, lightly emarginate in the male, the angles rounded on their internal face, and very slightly reflexed. Thorax thinly and minutely punctate, the dorsal channel rather lightly marked and broadest on the basal half, and the lateral foveæ deep, but not nearly reaching the middle. Scutellum smooth. Elytra rugosely punctate, the punctures somewhat smaller and more obliterate than in many of the species. The fore tibiæ are normally bidentate, the teeth and all the tarsi subcyaneous.

Length,  $4\frac{1}{2}$  lines.

*Hab.*—Illawarra, Coast Districts.

25. *DIPHUCEPHALA CUPREA*, n. sp.

Like *D. rugosa* but of less robust form, finer puncturation, and denser pubescence. It is of a semiopaque golden-green lustre, with the elytra coppery-red, the upper surface is thinly pilose, the under densely. The head is broad and finely punctate, flat, and sharply and shortly reflexed at the apex of the clypeus, the emargination slight. The thorax is punctate but less coarsely than in *D. rugosa*, the dorsal channel is distinct and widest behind, the lateral foveæ large but not very deep and the lateral angles well marked. Scutellum smooth, depressed in the middle, the

sides a little rounded. Elytra transversely rugosely punctate. Pygidium rounded on the sides, convex, glabrous at the apex. Legs coppery-green, the fore tibiæ normally bidentate.

Length,  $2\frac{1}{4}$  lines.

*Hab.*—Rockhampton.

26. *DIPHUCEPHALA HUMERALIS*, n. sp.

Dark metallic-green, upper surface minutely pilose, beneath densely. Head densely punctate, vertical surface quite flat, the emargination of the clypeus short and broad, the angles slightly reflexed, the suture of the proclypeus distinct. Thorax variolose-punctate, dorsal channel lightly impressed but rather broad, the lateral foveæ wide, and the lateral angle minute. Scutellum smooth. Elytra sharply rugose punctate, little wider than the thorax, in this resembling *D. rugosa*, with a narrow basal margin and the humeral angles of a reddish-purple or ruby colour. The fore tibiæ are not bidentate; the place of the upper tooth occupied only by a slight sinuosity.

Length, 2 lines.

*Hab.*—Illawarra.

27. *DIPHUCEPHALA WATERHOUSEI*, Burm.

Handb. IV. p. 122.

Green, subsericeous, with the base and apex of the elytra cyaneous, thorax scarcely canaliculate, scutellum very smooth, fore tibiæ bidentate. Male with the clypeus acutely angled but not bidentate, the female unknown.

Length,  $3\frac{1}{2}$  lines.

This species I have certainly never seen and no locality is given by Burmeister. Notwithstanding the very imperfect description it evidently comes within the conditions of this sub-division of sub-section B.

28. *DIPHUCEPHALA QUADRITIGERA*, Blanch.

Cat. Coll. Ent. Mus. Paris, p. 100.

Entirely golden-green, above sparingly, beneath rather densely pilose. Head lightly impressed, very finely punctate; antennæ



pitchy black, thorax brilliant green, the middle of a golden hue, punctate, the hind and middle foveæ almost square, the lateral foveæ deep. Elytra green with a golden hue chiefly on the sides, strongly punctate in series with two slightly elevated lines. Legs green with white hairs; tarsi cyaneous, the fore tibiæ bidentate.

Length,  $2\frac{1}{2}$  lines.

*Hab.*—New South Wales.

I cannot, from the above description of Blanchard's, make out the species with certainty, but if the insect I take to be it, is so, the description of the dorsal channel should be "basal half wider and somewhat quadrangular."

#### 29. *DIPHUCEPHALA ANGUSTICEPS*, n. sp.

Green with a golden-green gloss, sparingly pilose above, densely beneath. Head rather narrow, short, densely and minutely punctate, the clypeus of the male reflexed and emarginate in front and pointed at the external angles. Thorax moderately punctate, the anterior and lateral angles acute, the dorsal channel wide, particularly on the basal half, the lateral foveæ large, deep, and extending almost to the middle. Scutellum a little depressed in the middle and minutely punctate. Elytra rugosely punctate. Under surface and legs of a bluish metallic-green, fore tibiæ bidentate.

Length, 2 lines.

*Hab.*—N. S. Wales.

#### 30. *DIPHUCEPHALA AZUREIPENNIS*, n. sp.

Dark green, elytra greenish-blue, the upper surface rather thickly pilose, beneath densely so. Head almost smooth on the vertex, thickly punctate on the forehead, with an impression on each side near the eyes, the clypeus densely and minutely punctate, nearly square, and very slightly emarginate and reflexed in the male, Thorax thinly punctate except in the foveæ, the dorsal channel deep and widening to the base, the lateral foveæ large. Scutellum impressed in the centre and minutely punctate. Elytra rugosely

punctate, with two slightly raised costæ on each side of the suture, and with the pile disposed in lines of single hairs. The fore tibiæ bidentate, the teeth small and rather distant; tarsi subcyaneous.

Length,  $2\frac{3}{4}$  lines. Male specimen only.

*Hab.*—Mitchell's Exp. Vict. River.

2. Dorsal channel of the thorax single, lateral foveæ reaching the middle.

### 31. DIPHUCEPHALA PULCHELLA, Waterh.

Trans. Ent. Soc. Lond. I. p. 221.

Green or bluish, nitid, sparingly pilose. Head smooth on the vertex, densely and finely punctate in front, clypeus in the male very slightly emarginate and reflexed, the angles somewhat truncate. Thorax thinly punctate, the dorsal channel of an elongated oval form, the lateral foveæ large, extending in a shallow depression to the dorsal channel. Scutellum deeply foveated in the middle, smooth. Elytra coarsely and thickly punctate. Fore tibiæ strongly bidentate, the teeth reddish.

Length,  $3\frac{1}{2}$  lines.

*Hab.*—Victoria and South Australia.

### 32. DIPHUCEPHALA AUROLIMBATA, Blanch.

Cat. Coll Ent. Mus. Paris, p. 99.

Smaller than *D. pulchella*, depressed, nitid, green, the middle of the thorax and the external limb of the elytra, of a brilliant golden hue; above almost glabrous, beneath with whitish pile. Head densely punctate; clypeus deeply forked, the angles spatuliform. Thorax strongly punctate, deeply and broadly sulcate in the middle, the lateral foveæ deep. Elytra flat, rugosely punctate, with longitudinal lines scarcely elevated, and some very short fulvous pile at the apex. Legs green, tarsi obscurely cyaneous.

To the above translated description of Blanchard's, I have only to add—“lateral foveæ of the thorax traceable to the dorsal channel, and fore tibiæ bidentate.”

Length,  $3\frac{1}{4}$  lines.

*Hab.*—Northern Coast of N. S. Wales, and Southern Queensland.

33. *DIPHUCEPHALA SMARAGDULA*, Boisd.

Voy. Astrol. Col. p. 204 ; Burm. Hand. IV. p. 117 ; *D. pusilla*, Waterh. Trans. Ent. Soc. Lond. 1, p. 226.

Nitid, green, clothed above and beneath with decumbent pile. Head punctate, the clypeus densely, and in the male slightly emarginate and reflexed, the angles broadly rounded. Thorax transverse, thinly punctate, the anterior and lateral angles acute, the dorsal channel wide and deep at the base, and the lateral foveæ deep and extending across the dorsal channel. Scutellum depressed and minutely punctate towards the apex. Elytra coarsely and rugosely punctate. Legs green, tarsi cyaneous. Fore tibiæ bidentate.

Length, 3 lines.

*Hab.*—N. S. Wales.

34. *DIPHUCEPHALA PRASINA*, n. sp.

Grass-green, subopaque, densely and sharply punctate. Head minutely punctate, the clypeus of the male roundly but not deeply emarginate with the angles slightly reflexed and rounded. Thorax very minutely and densely punctate, the lateral angle acute, the dorsal channel very wide and shallow on the basal half, and the lateral foveæ extending to the middle in a shallow groove. Scutellum rounded on the sides, depressed a little near the apex, where it is exceedingly minutely punctate. Elytra transversely punctate, with two distinctly elevated costæ and the humeral callus of a violet colour. The under surface is clothed with white decumbent pile, with the apex of each abdominal segment glabrous. Legs green, tarsi reddish, the fore tibiæ bidentate.

Length, 2 lines.

*Hab.*—Bargo.

3. Dorsal channel of thorax double at the base.

35. *DIPHUCEPHALA AURULENTA*, Kirby.

Trans. Linn. Soc. Lond. XII. p. 400 ; Waterh. Trans. Ent. Soc. Lond. I. p. 222 ; Burm. Handb. IV. p. 116 ; *D. foveolata*, Boisd. Voy. Astrol. Col. p. 203.

Of a coppery-red colour, lightly pilose above, more densely beneath. Head densely punctate in front, depressed broadly on the forehead between the eyes, the clypeus in the male very slightly emarginate and reflexed. Thorax coarsely and sparsely punctate, the dorsal channel slight on the anterior half, and very large, deep and square on the basal half, and divided in the middle by a smooth ridge; the lateral foveæ extending in a deep groove to the dorsal channel. Elytra densely and rugosely punctate in rows. Anterior tibiæ strongly bidentate, the teeth reddish.

Length, 4 lines.

*Hab.*—New South Wales Coast districts.

I have two imperfect specimens of a very brilliant species from the Richmond River, which closely resembles this one in every respect, excepting its more brilliant colouring and less pilosity. I have given it the cabinet name of *D. effulgens*.

### 36. DIPHUCEPHALA PARVULA, Waterh.

Trans. Ent. Soc. Lon. I. p. 223; Burm. Handb. IV. p. 118.

Golden or coppery-green, rather thinly pilose. Head densely punctate in front, the clypeus in the male somewhat triangularly roundly emarginate, the angles rounded and reflexed. Thorax coarsely and thinly punctate, the dorsal channel broad on the basal half, divided into two by a smooth central ridge not extending on the anterior half, and the lateral foveæ very wide at the sides, and scarcely reaching the middle. Scutellum smooth. Elytra rugosely punctate, anterior tibiæ with the terminal tooth only.

Length,  $2\frac{1}{2}$  lines.

*Hab.*—New South Wales.

### 37. DIPHUCEPHALA PYGMÆA, Waterh.

Trans. Ent. Soc. Lond. I. p. 227; Burm. Handb. IV. p. 118; *D. fulgida?* Boisd. Voy. Astrol. Col. p. 205.

Green, scarcely nitid, rather densely covered on the upper surface with short decumbent and yellowish pile, beneath more densely whitish pilose. Clypeus of the male narrow and recurved,

moderately emarginate. Head and thorax extremely minutely and densely punctate, having a somewhat sericeous appearance. The dorsal channel of the thorax is broad and very shallow on the basal half, with a very faint elevated ridge in the middle, the lateral foveæ are rather large and extend to the middle. The scutellum is depressed in the middle and very minutely punctate. Elytra less coarsely punctate than usual, the two longitudinal ridges distinct. Anterior tibiæ bidentate, the teeth reddish.

Length, 2 lines.

*Hab.*—New South Wales.

### 38. *DIPHUCEPHALA PURPUREITARSIS*, n. sp.

Green, head and thorax with a blue tinge, a short thin pubescence on the upper surface, a slightly denser decumbent pile beneath. Clypeus of male slightly emarginate and reflexed. Thorax finely punctate, the dorsal channel broadly oval on the basal half with a distinct but low middle ridge, the lateral foveæ not reaching the middle. Scutellum with a fovea near the base. Elytra rugosely and rather obliteratedly punctate, rather nitid, the two longitudinal ridges distinct. Abdomen and legs brilliant green, tarsi long, slender and of a reddish-purple colour, anterior tibiæ bidentate.

Length, 2 lines.

*Hab.*—New South Wales.

### 39. *DIPHUCEPHALA LATERALIS*, n. sp.

Green, subnitid, the elytra broadly bordered on the sides with golden-red, the upper surface rather densely yellowish-pilose. Head densely punctate, the clypeus of the male very slightly emarginate and reflexed. Thorax densely and finely punctate, the dorsal channel on the basal half forming two rather narrow foveæ separated by a rather broad interval, the lateral foveæ are deep and do not reach the middle. The scutellum is slightly depressed in the middle. The elytra are densely and sharply punctate, the

two longitudinal ridges on each side moderately distinct. Under surface thinly clothed with decumbent white pile. Anterior tibiæ bidentate.

Length, 2 lines.

*Hab.*—New South Wales.

40. *DIPHUCEPHALA OBSOLETA*, n. sp.

Of a coppery hue, subnitid, without pile above, pilose beneath. Clypeus of the male acutely angled. Thorax rather thinly punctate, except in the foveæ, the dorsal channel continuous, but very broad and deep on the basal half, where it is divided by an almost obsolete ridge; the lateral foveæ deep and reaching the middle. Scutellum of elongate triangular form, impressed in the middle. Elytra coarsely transversely punctate. Legs wanting.

Length, 2 lines.

*Hab.*—New South Wales.